

Introduction of e-learning into the pre-registration midwifery curriculum

By Elinor J Clarke

Abstract

This article identifies the introduction of interprofessional e-learning into the pre-registration midwifery curriculum. It provides a personal reflection of the experiences of using e-delivery of the interprofessional teaching and learning pathway at Coventry university. E-learning is not new, yet, there has been a lack of information (research, literature and evidence) about e-learning and information technology and pre-registration midwifery education. This article provides insights into the modern midwifery curriculum, contextualizing the need for interprofessional education and identifying some of the challenges to the midwifery profession, educators and students inherent in this method of delivery. The article also suggests some solutions to the challenges and offers insight into possible technologies for delivery of the midwifery curriculum in the future.

This article is a reflection on the introduction of e-learning and use of information technology in the pre-registration midwifery curriculum at Coventry university. The midwifery curriculum, in common with other professions, is underpinned by an understanding of knowledge, appropriate ways to teach and support learning, and content that is research and evidence based. The changing environment of midwifery education from NHS trusts to higher education has influenced curricular structure, for example, a modular approach and academic credit rating of courses. Other influences on the midwifery curriculum such as national strategies, government reports and the midwifery profession have contributed to the emergence of modern midwifery curricular to meet the needs of a variety of stakeholders.

In 2005 an opportunity occurred to undertake the conjoint validation (Nursing and Midwifery Council (NMC), Health Professions Council (HPC) and the Quality Assurance Agency (QAA)) of all health and social care undergraduates' courses at Coventry university. The revalidation was the culmination of consultation and an interdisciplinary approach to enhance and update curriculum. The 2005 curriculum planned to use e-learning to support interprofessional education for all

undergraduate health and social care professionals.

Women who access the maternity services are increasingly using electronic means to find information during the childbirth continuum. Many midwives are experiencing the benefits of modern electronic technology at home (mobile phones, online shopping and digital photography) and in the workplace (e-mails, notification of birth, telemedicine – where medical information is transferred by phone, the internet or other networks for the purposes of consultation, electronic fetal heart rate monitoring and voting online in the nursing and midwifery council (NMC) elections). Post-registration and professional development courses and modules are also using electronic technology (online lectures, course enrolment, distance learning). Yet there has been a lack of research, literature and evidence about e-learning and information technology and pre-registration midwifery education. Meanwhile, the latest generation of undergraduates are expecting student-centred learning environments, have service expectations around quality teaching, are experienced in using Web 2.0 technologies (an umbrella term for numerous applications such as blogs, wikis, social networking and virtual worlds) and are making choices about their courses based on personal educational needs. The pressure is on for midwifery educators to provide quality, cost-effective programmes which prepare students for autonomous and collaborative midwifery practice, as well as meeting the diverse learning needs of students.

This personal reflection will provide insights into the experiences of a midwifery educationalist and suggests that the introduction of e-learning into the midwifery curriculum creates different challenges for the midwifery profession, educators and students.

Preparation

Curriculum

Changes to the midwifery curriculum occur in response to reports and demands from key stakeholders, for example, the World Health Organisation (WHO, 1987; Department of Health (DH, 1997; 2000; 2001), as well as lessons learned from independent inquiries such as the Bristol report (Kennedy, 2001) the report of the Victoria Climbié inquiry (Laming 2003), and reports such as Confidential Enquiries into Maternal Deaths (Confidential Enquiry into Maternal Deaths, 2001; Lewis, 2007). In addition midwifery curriculum is influenced by the needs of childbearing women (DH, 1993; DH, 2007). The Nursing and Midwifery Council (NMC, 2002: 5) identified requirements for pre-registration midwifery programmes to include preparation:

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for partnership with other members of the health care team, working effectively across professional boundaries in the best interests of women and their families.'

The NMC (2004a: 7) identified that the standard of proficiency necessary for a midwife to enter the register would be to be able to 'work collaboratively with other practitioners and agencies' and to 'demonstrate effective working across professional boundaries and develop professional networks'. These changing standards demonstrate the need for developing a curriculum to enable students to demonstrate these skills. In addition midwives are required to manage and develop care using the most appropriate information technology (IT) systems (NMC, 2004b: 7).

The culmination of international drivers, national strategy, independent reports, quality initiatives, recommendations from investigations around maternal deaths and the need for a team approach to health care has led to redevelopment of the midwifery curricula to educate professionals to work together in improving health and health care (Headrick and Khaleel, 2008) and to enable students to acquire and develop competencies and skills in interprofessional working. The professional challenge is to get the balance between preparing students for autonomous practice and collaborative care. It is vital that service users and carers' voices are included and heard in the development of midwifery curricular, so that client-centred care remains at the heart of midwifery education and is not eroded by the preoccupation with professional team working. Barnett and Coate (2005) identify that engagement of academics in the curriculum calls for 'academic leadership of the highest order'. They go on to suggest that engaging academics turns out to be nothing short of engaging the university itself.

The drivers at Coventry university to adopt e-learning for the interprofessional learning pathway were both strategic and logistical. The strategy was to use e-learning to reduce the barriers associated with interprofessional education. Logistics surrounded the intention to support student learning across fourteen health and social care courses, approximately 1000 students for each year group. The 2005 validated curriculum comprised of three learning pathways:

- Uni-professional pathway (university and clinical placements)
- Common core pathway (blended learning)
- Inter-professional pathway (e-learning)

The Uni-professional pathway is the part of the course unique to each discipline and involves clinical practice and theoretical modules addressing the specific professions (the art and science of midwifery and the health and wellbeing of childbearing women and their families). The common core pathway is studied in uni-professional groups or by two or more professions (multiprofessional education) studying together. Student midwives study topics that are common to all professionals, for example, anti-discriminatory practice, theoretical aspects of management, leadership, research and evidence-based practice, thus, they share learning opportunities with other health and social care professionals.

The integration of e-learning pedagogy (Moule, 2007) and the introduction of new teaching strategies (Norris, 2008) which develop communication and team working skills are

significant developments in midwifery education and reflect the need for midwives to improve collaboration and team-work in the delivery of complex maternity services.

E-learning

The term e-learning was not in general use in education until 2002 (Littlejohn and Pegler, 2007). In 2005 the Higher Education Funding Council Education (HEFCE) published an e-learning strategy. E-learning may be defined as:

'... any intended learning which is facilitated over the web, or at a stretch, over a local network or internet.'
(Súilleabháin 2003: 3).

Farrell (2005: 157) suggests that:

'E-learning is the facilitation of learning through the use of electronic technology.'

There is increasing evidence of e-learning occurring in post-registration midwifery and other continuing education courses, for example, the Royal College of midwives has two pilot electronic learning modules (leadership and the second stage of labour). Connor (2003) reported on inter-professional computer-assisted learning within a postgraduate module but this did not include midwives. To date there has been little discussion and evidence surrounding pre-qualifying midwifery education and e-learning. There has been little discussion around e-learning and midwifery curricular and future professional practice. A notable exception being Pollard and colleagues (2008) who considered the relevance of pre-qualifying interprofessional education for future professional practice.

There is a wealth of literature addressing e-learning (Bach et al, 2007; Salmon, 2004; Littlejohn and Pegler, 2007) but some focus specifically on health professionals, for example, Moule (2007). A Canadian study (Caison et al, 2008) considered the technology readiness of nursing and medical students suggested that educators implementing curricular changes would be well served to support the needs of rural students, women, and those entering at a non-traditional age. Student midwives may not conform to a typical university undergraduate profile (young, IT literate and comfortable with e-learning). By choosing an e-learning approach, student midwives had new opportunities for learning collaborations and partnerships as well as extending their learning community, which is thought to enhance interprofessional working.

The inter-professional pathway provides the solution to preparing undergraduate health professionals for modern collaborative health care. The pathway was launched to all undergraduate health and social care students in December 2005 and delivered online using a Web CT platform which is known to students as CUOnline. Student midwives engaged in e-learning on the interprofessional pathway for four weeks in year one, two and three of the course. Learning outcomes for year one were centred around professional roles and responsibilities; year two was collaboration and year three working together. Collaborative practice is working with other individuals or groups to achieve their goals and yours, and working together is about team working towards a common goal.

The students were all allocated to virtual learning sets

which comprised of at least three different disciplines. This was achieved by a learning technologist or e-administrator who logistically organized student groups and provided technical support during the online teaching of the interprofessional pathway. The virtual learning sets each had an e-facilitator who was an academic member of staff who had undertaken specific training to support e-learning. Lewis and Allen (2005) suggest that learning communities which consist of groups of professionals and practitioners are coming together to share ideas and experience and to tackle professional work-based problems and issues are changing the way in which we learn and work together.

Evaluation

Curriculum

Savin-Badin (2008: 144) argues that curricula 'need to be seen not just as content for meddling with' but as a diverse space of opportunity. The curriculum validation was an opportunity to rethink teaching and learning for all undergraduate students. In 2005, Coventry university was successful in gaining a Centre for Excellence in Teaching and Learning (CETL) award from the HEFCE. The focus of the centre for interprofessional e-learning has been to engage staff development strategies for e-moderation, interprofessional facilitation and interprofessional 'learning objects' and to develop a digital repository of 'learning objects' (Coventry university repository and virtual environment (CURVE). Learning objects are the teaching and learning materials used in an electronic environment. The challenge was to develop an interprofessional learning object (IPLO) and was seconded to the centre for interprofessional e-learning to contribute to the design and development of leadership and management learning materials.

Midwifery colleagues contributed to the development of 'Becky' (the name given to a patient journey learning object focusing on teenage pregnancy). E-learning approaches often use case studies (Barrett et al, 2005; Leeder, 2007). The interprofessional pathway used learning materials or learning objects which focus on the patient experiences to enable students to discuss, share perspectives and contribute professional knowledge in response to a trigger, such as a patient journey or vignette. A vignette is a snapshot of a patient's health-care experience used to illustrate aspects of their care. An example could be delivery of a baby. The vignette is useful as it identifies a health-care encounter, provides insight into how the patient feels and also describes behaviour.

The teaching tools used were interprofessional learning objects, namely patient journeys in years one and two and vignettes in year three. Patient journeys provided triggers for discussion around roles and responsibilities (year 1), values, beliefs and attitudes (year two) and the vignettes provided focus for anti-discriminatory care (year three). Student midwives find teaching and learning materials which do not have or include a role for the midwife or focus on a medical condition challenging. Engaging in online discussions is easier with relevant, authentic and inclusive learning materials. Student midwives required to use disease or abnormality triggers may have difficulties and can be challenged to

transfer their knowledge around normal childbirth and midwifery values such as client choice, continuity and control.

Beecher and Trowler (2001) suggested that academics tend to think of issues relating to learning, teaching and assessment in terms of their own discipline. It is no surprise that midwifery educators are concerned about terminology and language used for interprofessional learning materials. Use of the word 'patient' when referring to women and 'delivery' for birth is felt to reinforce the medicalisation of childbirth and ignore the unique contributions that the midwifery profession can bring. Midwifery educators are keen to promote the autonomous role and responsibilities of the midwife, convey messages of the normality of childbirth and promote woman-centred care. The challenge of interprofessional working for curricular design, development and delivery is to ensure that smaller professional groups' perspectives are not lost. Effective collaborative working requires professionals to learn about each other's perspectives, priorities, responsibilities and remit (Lindsay, 2005).

Becoming an interprofessional educator is a new and emerging role in health and social care education. By using learning objects to develop the students' abilities to learn with, from and about each other (CAIPE, 2006) the intention is to enable students to work collaboratively as a team member and to communicate in ways which are acceptable and understood by professionals and service users and carers alike. In summary, midwifery educators have participated in interprofessional working in the development and delivery of health and social care curricular and have acquired and developed teaching skills necessary to support the e-delivery of the midwifery curricula.

E-learning

Introducing e-learning and pedagogical innovation is also challenging. Teachers in higher education often use technology to support student learning. Many universities encourage the placement of lecture notes, quizzes, additional materials, and emails in learning environments for each module. Often a university will customize software, for example, CUOnline is a version of Web CT, a Blackboard package. However e-learning is not just about placing materials online, e-learning is underpinned with learning theory.

Andragogy or the art and science of helping adults learn (Knowles, 1984) relies on students using past experience and applying knowledge acquired at a personal level. It is also associated with collaborative working and dialogue with others with mutual trust and respect, both peers and lecturers, to shape, elaborate and deepen understanding (Craddock et al, 2006). Team learning theory (Barr et al, 2005) focuses on collaboration within the group as distinct from between groups. Learning strategies for e-learning and specifically interprofessional e-learning are problem-based learning, blended learning and guided discovery.

The development of suitable teaching and learning materials for a virtual learning environment and provision of staff development opportunities to acquire online teaching skills is challenging for an organization, staff and resources. E-learning is a core priority for Coventry university and to become a 'smart' campus forms one of the current key business objectives.

According to Salmon (2004: vii):

'...successful online learning depends on teachers and trainers acquiring new competences, on their becoming aware of its potential and on their inspiring learners, rather than mastering technology'.

Becoming a web 2.0 teacher and facilitating e-learning requires the development of new and additional skills (Utecht, 2007) as well as support. Salmon suggests (2004) that e-moderators are a new generation of teachers and trainers who work with learners online. Midwifery educators at Coventry have undertaken training and facilitate online learning of the interprofessional learning sets.

The service user perspective is increasingly emphasised in all courses leading to qualification for health and social care practice (Barrett et al, 2005). By working in partnership with service users and carers it is thought to improve education and thus service delivery. The current social and political climate requires service users to be involved with the education and training of all health and social care professionals.

Reflection

Curriculum

Interprofessional e-learning has enhanced the midwifery curriculum in a variety of ways and bought opportunities for staff development and interprofessional working in higher education. More work is required to inform education providers of the learning outcomes students need in order to become effective interprofessional workers (Ireland et al, 2008)

E-learning is associated with the development of communities of practice (Farrell, 2005). Sharing a learning environment with a wide variety of other health and social care students is thought to enable the students to also share knowledge, problems, experiences and best practice so that the total learning is greater than the individual parts. Effective collaborative working requires professionals to learn about each other's perspectives, priorities, remit and responsibilities (Lindsay, 2005). An interprofessional education is thought to reduce 'silo thinking' (the view that each profession stands alone and does not interact with other professions) and support collaborative working which, in turn, benefits patients. The long-term evaluation of the interprofessional e-learning pathway will contribute and inform us as to how successful educators have been in the e-delivery of the midwifery curriculum.

Student midwives are not virtual midwives as clinical skills, midwifery knowledge and the art and science that is the profession is not taught or acquired online. Interprofessional e-learning is one aspect of the midwifery curriculum. The NMC (2004b) regulate and control the standards of proficiency for pre-registration midwifery education and the NMC midwifery committee in their review of pre-registration midwifery education identified that midwives (at the point of registration) must possess the skills to know when it is necessary to refer women or their babies to other health professionals, such as obstetricians or paediatricians, to ensure they receive the appropriate care. When women require referral midwives must also be skilled in working as part of an inter-professional/multiagency team.

Interprofessional e-learning provides another opportunity for student midwives to engage and gain proficiency in communication, team working, collaboration and leadership necessary for employment in modern health-care systems. In Wright's (2008) study of students' views of interprofessional learning, key issues identified were students' understanding of interprofessional learning, educational issues, feelings of isolation and influence of interprofessional learning on practice.

An unreported challenge for midwifery educators has been the flexibility required for supporting an e-learning approach. Traditional contact hours for students are irrelevant as online facilitation responds to the student needs and to accessibility of the technology. However, like the students, educators may enjoy the flexible teaching opportunity that e-learning affords.

Student midwives are a diverse group with a wide range of experiences and skills. Cooper and colleagues (2007) have identified that e-learning research and development projects must effectively address accessibility and usability issues and that these need to be integrated throughout a project. High quality, interactive educational materials may entertain as well as support learning but cannot be included if they exclude some students.

A study of Australian undergraduate social work students (Ellis et al, 2007) revealed that if students do not understand how discussion can help them to reflect on and revise their ideas they are not likely to approach discussions in ways that will improve their understanding or level of achievement. Educators creating learning experiences which use discussion to promote learning should include teaching students how specific skills such as reflection can enhance their learning and achievements.

E-learning

The emergence of e-learning units, development of new technical roles and availability of new technology in higher education have all contributed to the increase in e-learning. Increasingly metrics (e.g. student attrition numbers or student satisfaction) associated with e-learning are being used by universities for comparisons and to illustrate student engagement and satisfaction. The speed of technological innovation is rapid and each wave of innovation presents educators with opportunities and challenges (Noss, 2008).

Deepwell and Malik (2008) recommend that more academic guidance is needed on what and how to use the technology even when information computer technology skills levels are high. The study also identified the significant role that the lecturer plays in facilitating students' use of technology. Not all midwifery lectures may wish to engage in e-learning and may feel daunted by the task. E-moderation, according to Salmon (2004), brings new challenges and these do not necessarily require mastering technology, which for some may be a bonus. Savin-Badin (2007) suggests that there are a number of assumptions about online learning. One assumption is that if you are experienced at face-to-face facilitation the transition to online facilitation should be relatively straight forward, Savin-Badin identified that this is not the case. Not all

midwives will accept the challenge of online facilitation.

With the emergence of new technologies other terminology may be introduced to reflect the changes, an example being the use of mobile technologies to deliver learning materials to students via mobile phones (iPhone) and digital devices (iPods). Barnes and Tynan (2007) suggest that universities that are prepared to teach in new ways are likely to win out in the market place. However, other technologies such as web 2.0 have excited the educational community and may lend themselves to further transformation of learning and teaching (Selwyn, 2008). Selwyn goes on to challenge the speculative nature of the usefulness of web 2.0 technologies and suggests that careful thought should be given to how 'education can change the web, as well as how the web can change education' (Selwyn 2008: 4)

Many childbearing women will use electronic means to communicate, learn and locate information during their pregnancies. It would seem reasonable for student midwives to do the same. By designing learning activities which require students to identify, access and appraise a number of websites student midwives can use these resources to inform clients and enable them to improve the quality of care by meeting the individual needs of their clients. This type of approach is also used by INTUTE virtual training suite (VTS) whereby health-care students access learning objects on how to use the internet (<http://www.Vts.intute.ac.uk/he/tutorial/nurse/>).

Interprofessional e-learning provides an opportunity for learning together using modern information technology. Singh and colleagues (2005) suggest that e-learning has enabled universities to expand their current geographical reach, to capitalise on new prospective students and to establish themselves as global educational providers. Given the economic incentives it is likely that e-learning will increasingly feature in the delivery of higher education.

Summary and action plans

- Successful e-learning requires forward planning and staff training. Recruitment and training of online facilitators and moderators is essential to maintain and support online courses
- Staff and student support are essential; both require many skills. Solutions might be evaluation of e-facilitation courses as a method of preparation for staff in their new roles and provision of an online support area
- The introduction of new terminology (VLS, e-learning) requires midwifery educators to develop new communication skills, share and expand terminology and vocabulary.
- A cultural change is necessary for midwifery educators to support e-learning, facilitated through professional debate, peer support and inclusive practice
- New information technology requires staff development opportunities to acquire and maintain information technology skills
- Change of delivery/learning environments. Students' learning takes place in different environments and midwifery educators need to provide a variety of learning environments to meet students' needs.

Conclusion

This article has reflected upon the introduction of e-learning into the pre-registration midwifery curriculum and has considered the contributions of e-learning to the midwifery curricular in the context of higher education. It has identified that the midwifery curriculum is not in a vacuum but is dynamic and responsive.

Working together with other health and social care practitioners, establishing new partnerships and collaboration with other educators has transformed the midwifery curricular. By introducing interprofessional e-learning into the midwifery curricular it is hoped to break boundaries, to enable health and social care professionals to work together, learn from and about each other and, in doing so, ultimately improve client care.

E-learning has also enabled universities to expand their student population, capitalise on new markets and meet the needs of a diverse student population. Traditional teaching methods are not directly transferable to e-learning. Midwifery educators have a responsibility to ensure that student midwives use relevant, authentic learning materials. The introduction of e-learning into the midwifery curricular was achieved and for many students using technology and accessing the internet is a normal way of life. It is important for midwifery educators to embrace technological innovation and develop teaching skills which enable the appropriate e-delivery of the midwifery curricula and to participate in the training and education of another generation of student midwives. After all, childbearing women are learning and researching using technology to inform and support each other during the childbearing continuum; midwifery educators and students should do the same.

BJM

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Box 1. Useful information

Centre for Interprofessional e-Learning (CIPEL): <http://www.cipel.ac.uk>
 Higher Education Funding Council (HEFCE): <http://www.hefce.ac.uk/>
 Health Professions Council (HPC): <http://www.hpc-uk.org/>
 NTUTE: <http://www.Vts.intute.ac.uk>
 Nursing and Midwifery Council (NMC): <http://www.nmc.org>
 Quality Assurance Agency (QAA): <http://www.qaa.ac.uk/>
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Key Points

- Re-validation of the midwifery curricula provided the opportunity to modernise and introduce e-learning for undergraduate student midwives.
- E-learning is being used to enable the achievement of specific interprofessional learning outcomes for undergraduate health and social care students.
- Midwifery educators are working interprofessionally to design, develop and deliver learning objects which reflect and respect the unique role and responsibilities of a midwife.
- Learning technologies and interprofessional education have contributed to the modernisation of the midwifery curricula in order for students to contribute to the modern health workforce.

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